

PHOTOGRAPHIC INTERPRETATION REPORT



SELECTED
MAJOR COMMUNICATIONS
FACILITIES
NORTH VIETNAM

NPIC/R-134/68
JANUARY 1969

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TITLE

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PHOTOGRAPHIC INTERPRETATION REPORT

SELECTED MAJOR COMMUNICATIONS FACILITIES NORTH VIETNAM

JANUARY 1969

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

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25X1C

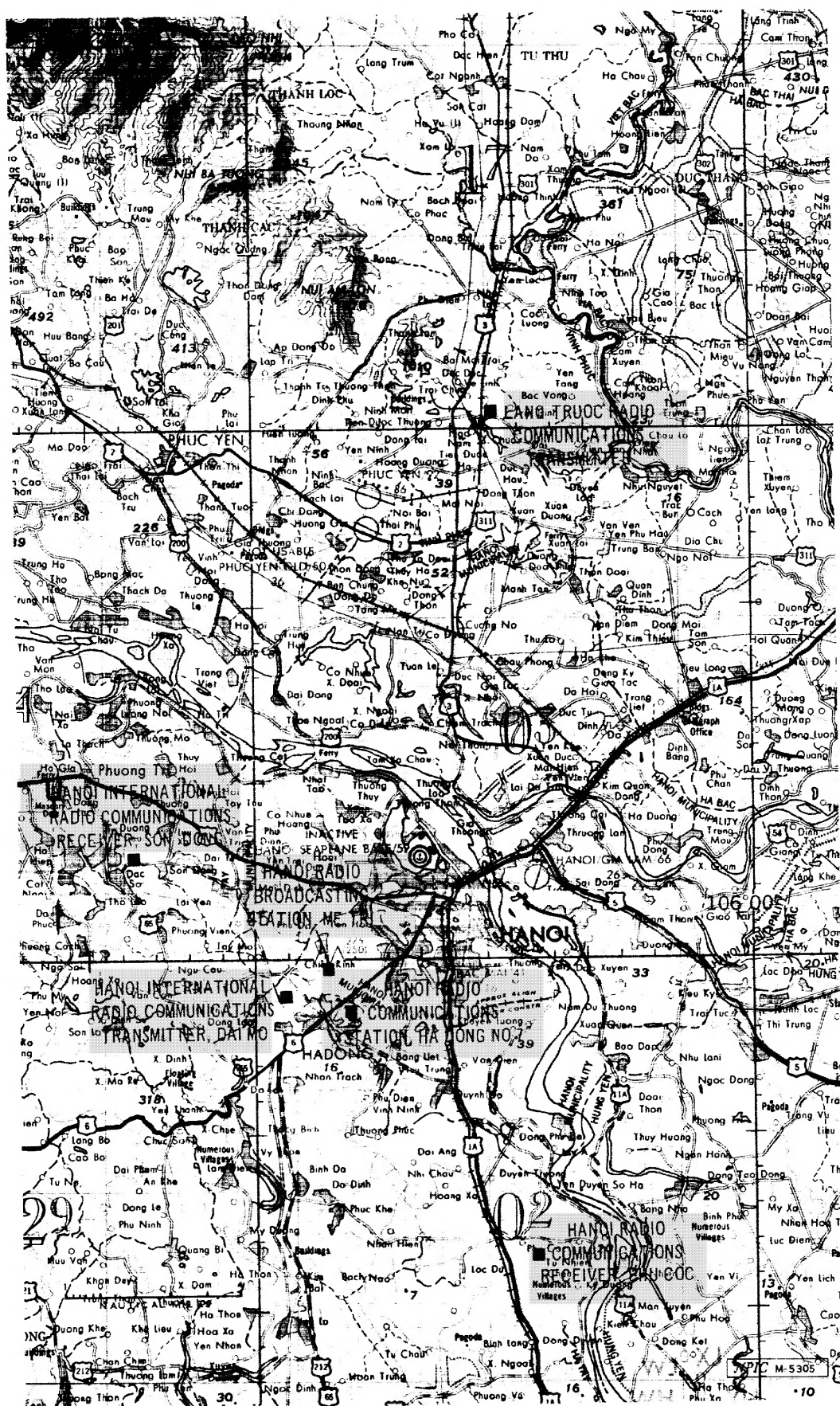


FIGURE 1. LOCATION MAP.

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INTRODUCTION

The North Vietnamese have established at least nine major communications facilities in North Vietnam. Six of these, in the immediate Hanoi area (Figure 1), are treated in detail in this report. These installations provide Hanoi with the comprehensive transmitting and receiving capability of a modern national and international communications network for direct support of North Vietnamese military and civilian needs. The installations and the order in which they appear in this report are as follows:

NAME	GEO. COORDS.	BE NO.	PAGE NO.
Hanoi International Radio Communications Transmitter, Dai Mo	20-58 N 105-46 E		2
Hanoi International Radio Communications Receiver, Son Dong	21-02 N 105-41 E		8
Lang Truoc Radio Communications Transmitter	21-15 N 105-52 E		14
Hanoi Radio Broadcasting Station, Me Tri	20-59 N 105-47 E		20
Hanoi Radio Communications Station, Ha Dong No 7	20-58 N 105-47 E		26
Hanoi Radio Communications Receiver, Phu Coc	20-51 N 105-53 E		32

25X1D

25X1D

25X1A

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NPIC/R-134/68

25X1C

HANOI INTERNATIONAL RADIO COMMUNICATIONS TRANSMITTER, DAI MO



25X1A

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INSTALLATION OR ACTIVITY NAME Hanoi International Radio Communications Transmitter, Dai Mo 25X1D 25X1D 25X1A				COUNTRY VN	
UTM COORDINATES [REDACTED]	GEOGRAPHIC COORDINATES 20-58 N 105-46 E	CATEGORY [REDACTED]	COMIREX NO. None	NIETB NO. None	
MAP REFERENCE AMS Series L7014, Sheet 6150 I, 1st ed, 1965, Scale 1:50,000 (Unclassified)					
LATEST IMAGERY USED [REDACTED]			NEGATION DATE (if required) None 25X1A		

25X1D

This station is located 5.7 nautical miles (nm) southwest of Hanoi and is served by an all-weather dirt road leading 1.1 nm south-east to Route 6 at Ha Dong. Two AAA sites are within 0.5 nm east and south of the station (Figure 2).

The antenna farm contains 12 rhombic, four VEE, and 12 horizontal dipole antennas (Figure 3). The rhombic antennas provide long range, high frequency communications to Europe, Asia, and Africa with double rhombic antennas oriented toward Europe and north Africa (Figure 4). The VEE antennas [REDACTED] are probably for omni-directional, short range communications. The horizontal dipole antennas are oriented for high frequency transmissions (primarily in the vicinity of [REDACTED] megahertz) throughout southern China and Southeast Asia (Figure 5). The entire antenna farm is probably fed from the main control building with some of the rhombic antennas having an alternate feed from the alternate control area.

The primary transmitting facilities are housed in the H-shaped building surrounded by an earth-mounded concrete wall (inset, Figure 3) except for three sections where the antenna feeds leave the building. These three sections consist of earth fill between two concrete walls. Also within the main control area are six support buildings, a substation, two guard towers, two cooling ponds, a probable pumphouse, and an underground reservoir.

South-southeast of the main control area is the alternate control area which was constructed in [REDACTED]. It contains two earth-mounded bunkers, one, a control bunker with feed lines leading to some of the rhombic antennas; the other bunker is probably for support.

The fenced support area northeast of the main control area contains four probable barracks, one messhall, a substation, and three support buildings.

The control building at Dai Mo is connected to the Hanoi Radio Broadcasting Station, Me Tri [REDACTED] 1.6 nm northeast, by a cable scar (Figure 2). Another cable scar and a land line are evident leading northeast from the Me Tri control building toward the Hanoi Citadel. This communications line is probably used to link the government control facilities in Hanoi with the two radio transmitting stations.

Electric power is provided by external sources via substations within the control and support areas. Diesel generators for emergency power are probably available; however, they have not been identified on photography.

25X1B

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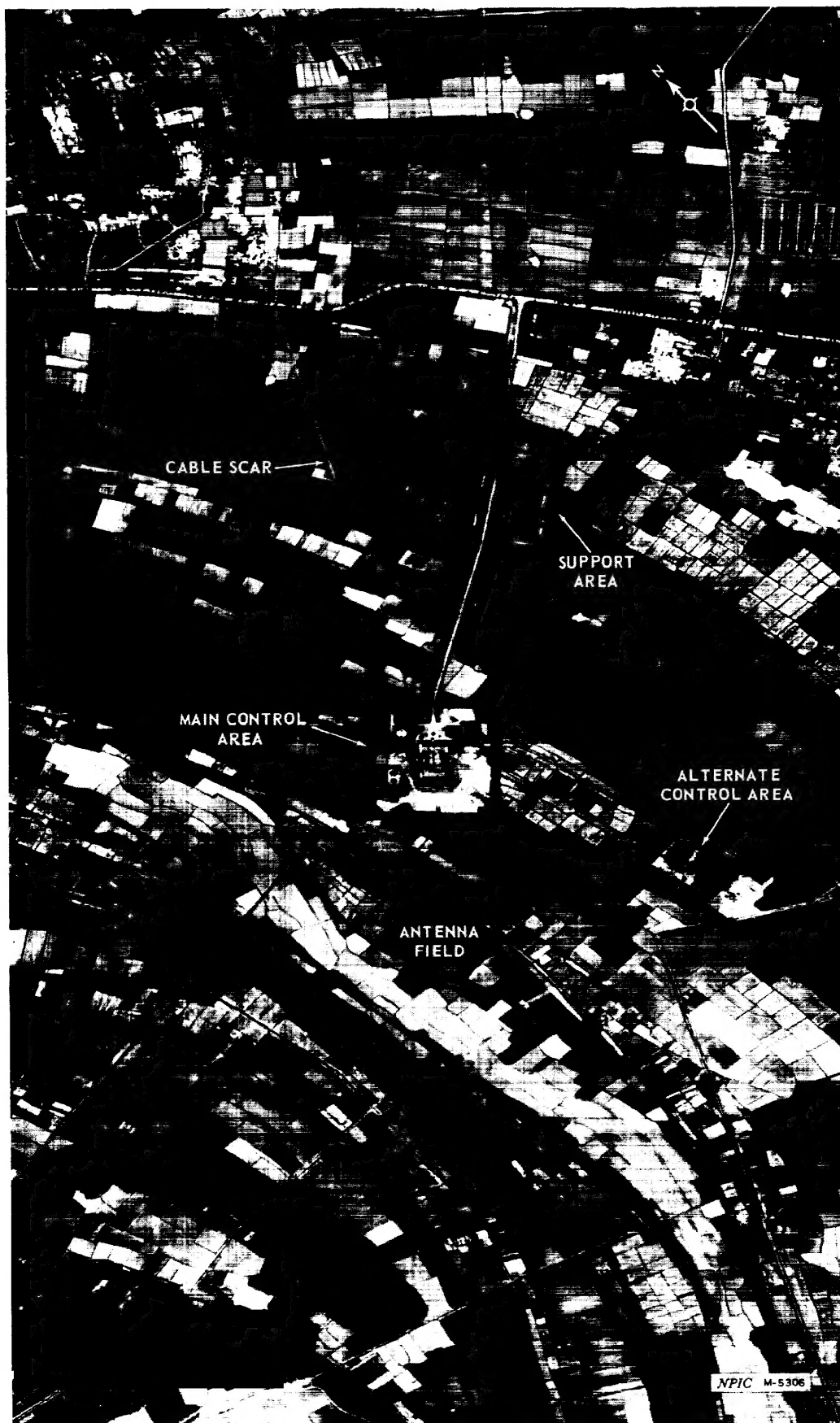


FIGURE 2. HANOI INTERNATIONAL RADIO COMMUNICATIONS TRANSMITTER, DAI MO, NORTH VIETNAM.

- 4 -

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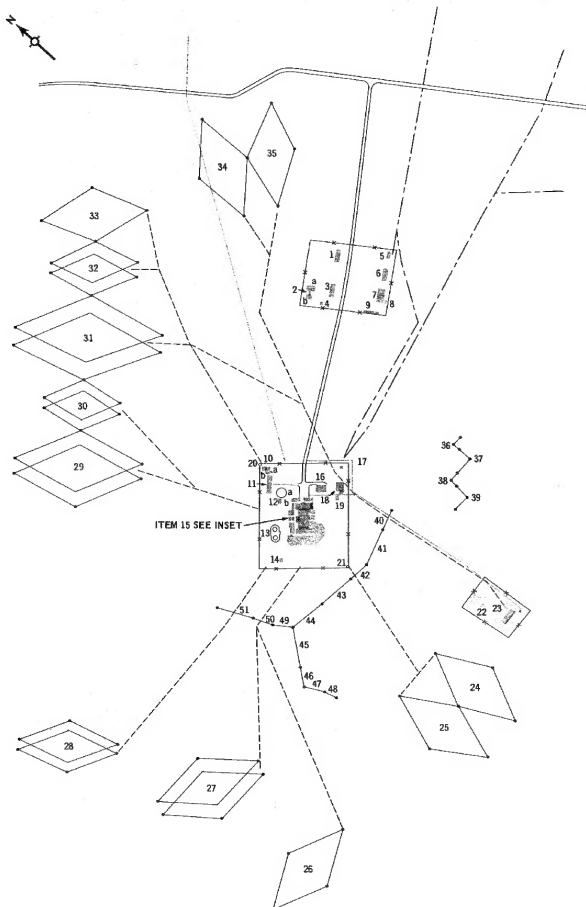
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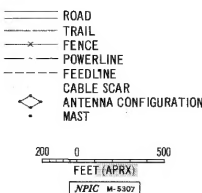
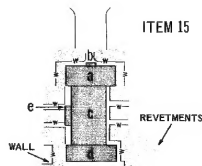
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25X1C



ITEM	DESCRIPTION	25X1D DIMENSIONS (FT)
1	PROBABLE BARRACKS	
2a	KITCHEN	
b	MESSHALL	
c	PASSAGEWAY	
3	PROBABLE BARRACKS	
4	SUPPORT BUILDING	
5	SUBSTATION	
6	PROBABLE BARRACKS	
7	PROBABLE BARRACKS	
8	SUPPORT BUILDING	
9	SUPPORT BUILDING	
10	SUPPORT BUILDING	
a	SECTION	
b	SECTION	
11	SUPPORT BUILDING	
12a	PROBABLE UNDERGROUND	
31	WATER RESERVOIR	
13	PROBABLE PUMPHOUSE	
b	2 COOLING PONDS	
14	SUPPORT BUILDING	
15	RETTED TRANSMITTER BUILDING	
a	SECTION	
b	SECTION	
c	SECTION	
d	SECTION	
e	SECTION	
16	SUPPORT BUILDING	
17	SUBSTATION	
18	SUPPORT BUILDING	
19	SUPPORT BUILDING	
20	GUARD TOWER	
21	GUARD TOWER	
22	SUPPORT BUNKER (EARTH COVERED)	
23	RETTED ALTERNATE TRANSMITTER BUNKER	



ANT NO	AXIS (FT) MAJ MIN	AVERAGE LENGTH ONE SIDE (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 4)	25X1D COMPUTED FREQUENCY (MEGAHERTZ)
24				SOUTH VIETNAM, EAST-ERN CAMBODIA, SOUTH-ERN LAOS, JAVA	
25				SOUTH VIETNAM, EAST-ERN CAMBODIA, SOUTH-ERN LAOS, JAVA	
26				LAOS, BURMA, INDIA	
27				CAIRO, NORTH AFRICA	
28				EUROPE	
29				EUROPE	
30				EUROPE	
31				EUROPE	
32				EUROPE	
33				TIBET, TASHKENT, SOUTH-ERN EUROPE	
34				PEKING	
35					

NOTE: EACH ANTENNA HAS A [REDACTED] AND IS ASSIGNED TO BE 4 WAVE LENGTHS LONG ON A SIDE.

ANT NO	POLE SEPARATION (FT)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
36	50	
37	90	
38	50	
39	90	

NOTE: EACH ANTENNA HAS 90° INCLUDED (APEX) ANGLE. IS OMNI-DIRECTIONAL AND EACH LEG IS 1/4 WAVE LONG.

ANT NO	POLE SEPARATION (FT)	EST ANT LENGTH (FT)	INITIAL GREAT CIRCLE (°)	PROBABLE CORRESPONDENT (SEE FIGURE 5)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
40				HUE/HA GIANG	
41				HUE/HA GIANG	
42				CAO BANG/PHNOM PENH	
43				CAO BANG/PHNOM PENH	
44				CAO BANG/PHNOM PENH	
45				YULIN/LAO CAI	
46				YULIN/LAO CAI	
47				SOUTHEAST CHINA/NORTHEAST LAOS	
48				YONG CAI/LUANG PRABANG	
49				NANNING/PLAINE DES JARRES	
50				SOUTHEAST CHINA/NORTHEAST LAOS	
51				SOUTHEAST CHINA/NORTHEAST LAOS	

FIGURE 3. HANOI INTERNATIONAL RADIO COMMUNICATIONS TRANSMITTER, DAI MQ, NORTH VIETNAM.

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- 6 -

SECRET

25X1C
3-3

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25X1C

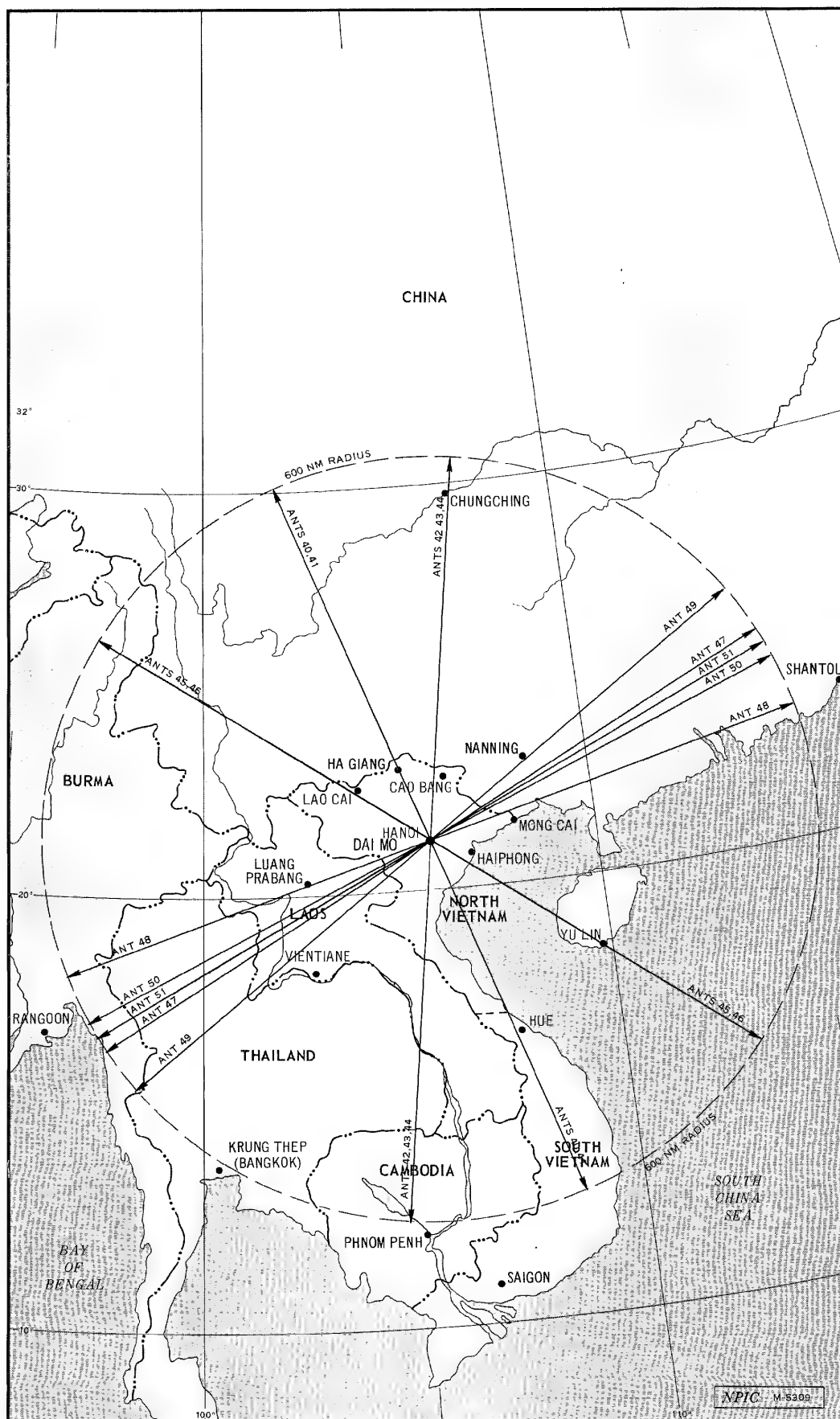


FIGURE 5. AZIMUTH PROJECTIONS FOR HORIZONTAL DIPOLE ANTENNAS AT HANOI INTERNATIONAL RADIO COMMUNICATIONS TRANSMITTER, DAI MO, NORTH VIETNAM.

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NO FOREIGN DISSEM

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25X1C

HANOI INTERNATIONAL RADIO COMMUNICATIONS RECEIVER, SON DONG

25X1A

NO FOREIGN DISSEM

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25X1C

INSTALLATION OR ACTIVITY NAME		COUNTRY	
Hanoi International Radio Communications Receiver, Son Dong 25X1D 25X1D		VN	
UTM COORDINATES	GEOGRAPHIC COORDINATES	COMIREX NO.	NET NO.
21-02 [REDACTED] N 105-41 [REDACTED] E	[REDACTED]	None	None
MAP REFERENCE			
AMS Series L7014, Sheet 6151 III, 1st ed, 1965, Scale 1:50,000 (Unclassified)			
LATEST IMAGERY USED		NEGATION DATE (If required)	
[REDACTED]		None 25X1A	

The Son Dong receiving station, 8.6 nm west-northwest of Hanoi, is served by an unnumbered dirt road leading 1 nm west to Route 65 at Que Duong. One eight-gun AAA site is 0.5 nm southwest of the station (Figure 6).

The antenna farm contains 15 rhombic and six horizontal dipole antennas (Figure 7). The rhombic antennas are capable of receiving long range, high frequency communications from Europe, Asia, and Africa with double rhombic antennas oriented toward Europe and north Africa (Figure 8). The horizontal dipole antennas are oriented for high frequency reception (primarily between [REDACTED] mega-hertz) throughout southern China and Southeast Asia (Figure 9). Feed lines from all the antennas lead to the control building with feeds from the rhombic antennas, oriented toward Europe, also leading to a bunkered probable alternate receiver building.

The control area consists of the primary receiving facilities housed in a single-story building, a generator and transformer building, two support buildings, and a guard tower. A secured alternate control area contains two earth-mounded bunkers, one, a probable receiver bunker and the other, a probable support bunker. The support area, separated from the control area by a wall, contains 15 support buildings and a guard tower.

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25X1C



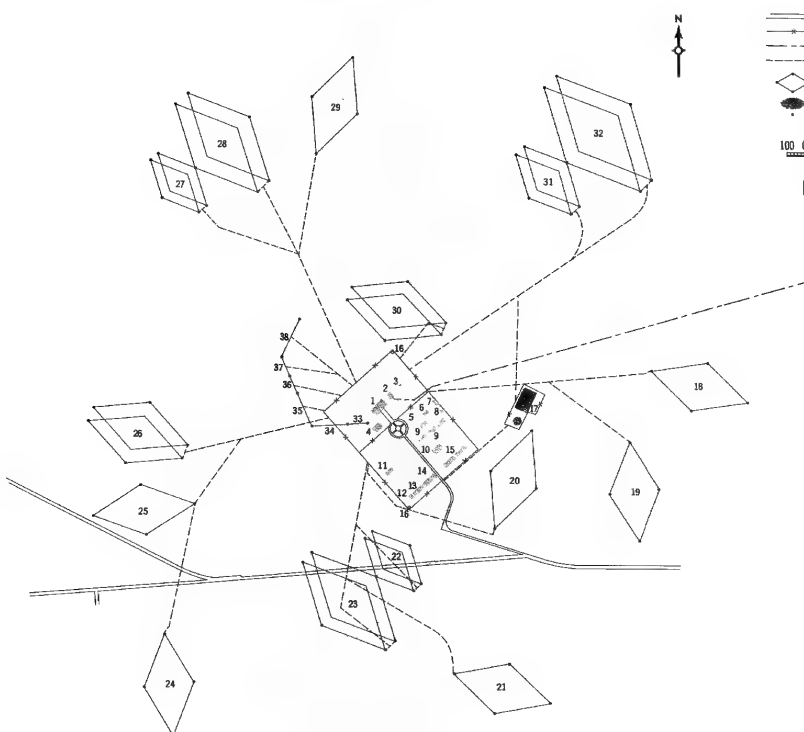
FIGURE 6. HANOI INTERNATIONAL RADIO COMMUNICATIONS RECEIVER, SON DONG, NORTH VIETNAM.

SECRET

25X1C

SECRET

NPIC/R-134/68



STRUCTURES

ITEM	DESCRIPTION	DIMENSIONS (FT)
1	RECEIVER BUILDING	25X1D
2	GENERATOR AND TRANSFORMER BUILDING	
3	SUPPORT BUILDING	
4	SUPPORT BUILDING	
5	SUPPORT BUILDING	
6	SUPPORT BUILDING	
7	SUPPORT BUILDING	
8	SUPPORT BUILDING	
9	4 SUPPORT BUILDINGS	
10	SUPPORT BUILDING	
11	SUPPORT BUILDING	
12	SUPPORT BUILDING	
13	SUPPORT BUILDING	
14	SUPPORT BUILDING	
15	2 SUPPORT BUILDINGS	
16	2 GUARD TOWERS	
17	EARTH-BOUNDED PROB ALTERNATE RECEIVER BUILDING	

*APPROXIMATE

RHOMBIC

ANT NO	AXIS (FT) MAJ MIN	AVERAGE LENGTH ONE SIDE (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 8)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
18	600 315	340		MANILA	25X1B
19	595 295	335		SOUTH VIETNAM, THAILAND, CAMBODIA	
20	610 290	340		NORTH (PEKING, KOREA, JAPAN)	
21	600 300	340		MANILA	
22	425 210	240		EUROPE	
23	720 360	400		EUROPE	
24	600 290	335		SOUTH VIETNAM, THAILAND, CAMBODIA	
25	605 290	340		BURMA	
26	600 290	330		CAIRO	
27	420 210	235		EUROPE	
28	710 370	400		EUROPE	
29	605 290	340		NORTH (PEKING, KOREA, JAPAN)	
30	600 290	330		CAIRO	
31	480 240	370		EUROPE	
32	830 410	465		EUROPE	

NOTE: EACH ANTENNA AVERAGES [REDACTED] AND IS ASSUMED TO BE FOUR WAVE LENGTHS LONG ON A SIDE.

25X1D

DIPOLE

ANT NO	POLE SEPARATION (FT)	EST ANT LENGTH (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 9)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
33				LAOS/IN-COUNTRY	25X1B
34				LAOS/IN-COUNTRY	
35				HONG KONG/LAOS AND IN-COUNTRY	
36				HONG KONG/LAOS AND IN-COUNTRY	
37				HONG KONG/LAOS AND IN-COUNTRY	
38				YULIN/MENGTZU	

25X1D

FIGURE 7. HANOI INTERNATIONAL RADIO COMMUNICATIONS RECEIVER, SON DONG, NORTH VIETNAM.

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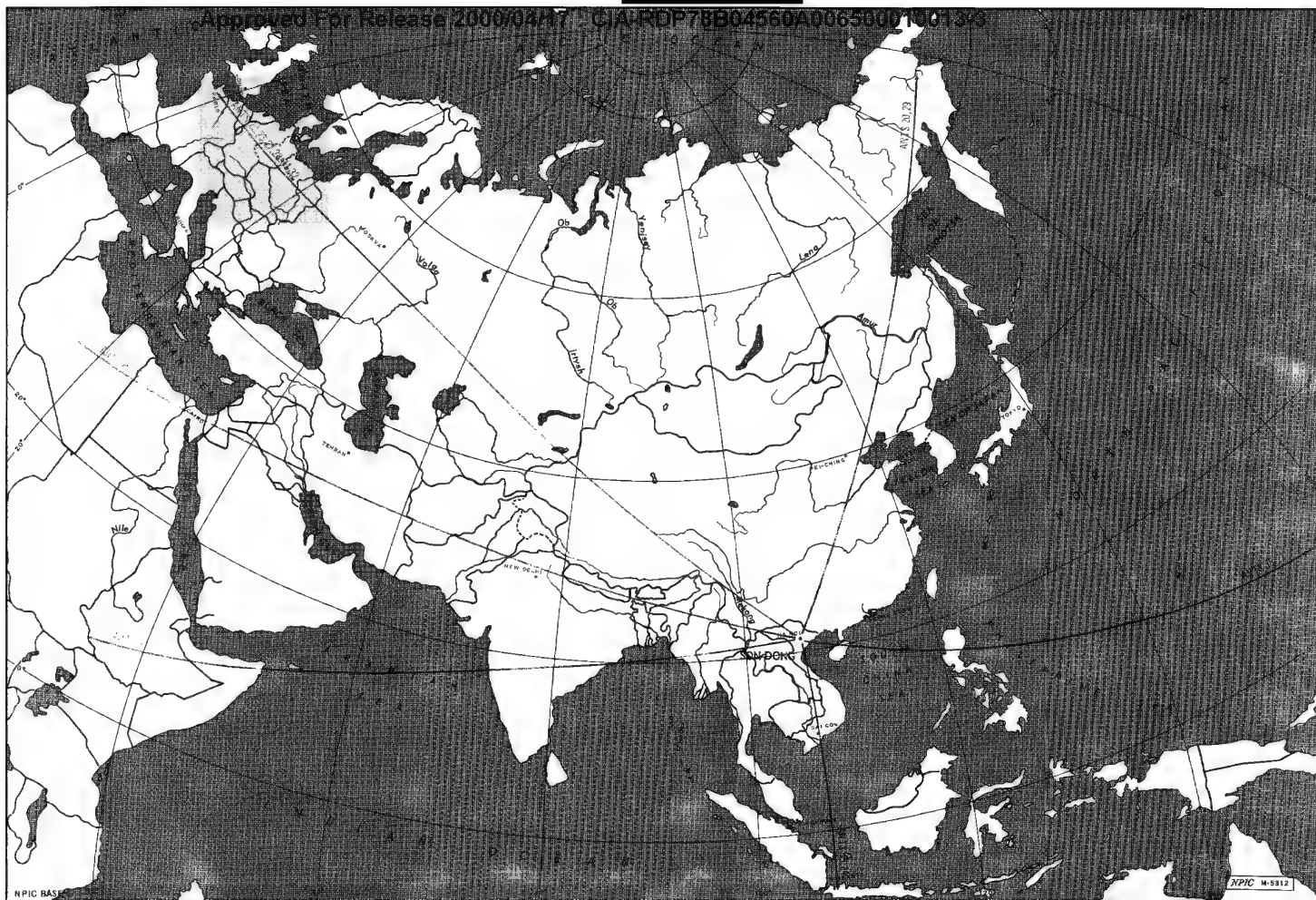


FIGURE 8. FORWARD AZIMUTH PROJECTIONS FOR RHOMBIC ANTENNAS AT HANOI INTERNATIONAL RADIO COMMUNICATIONS RECEIVER, SON DONG, NORTH VIETNAM.

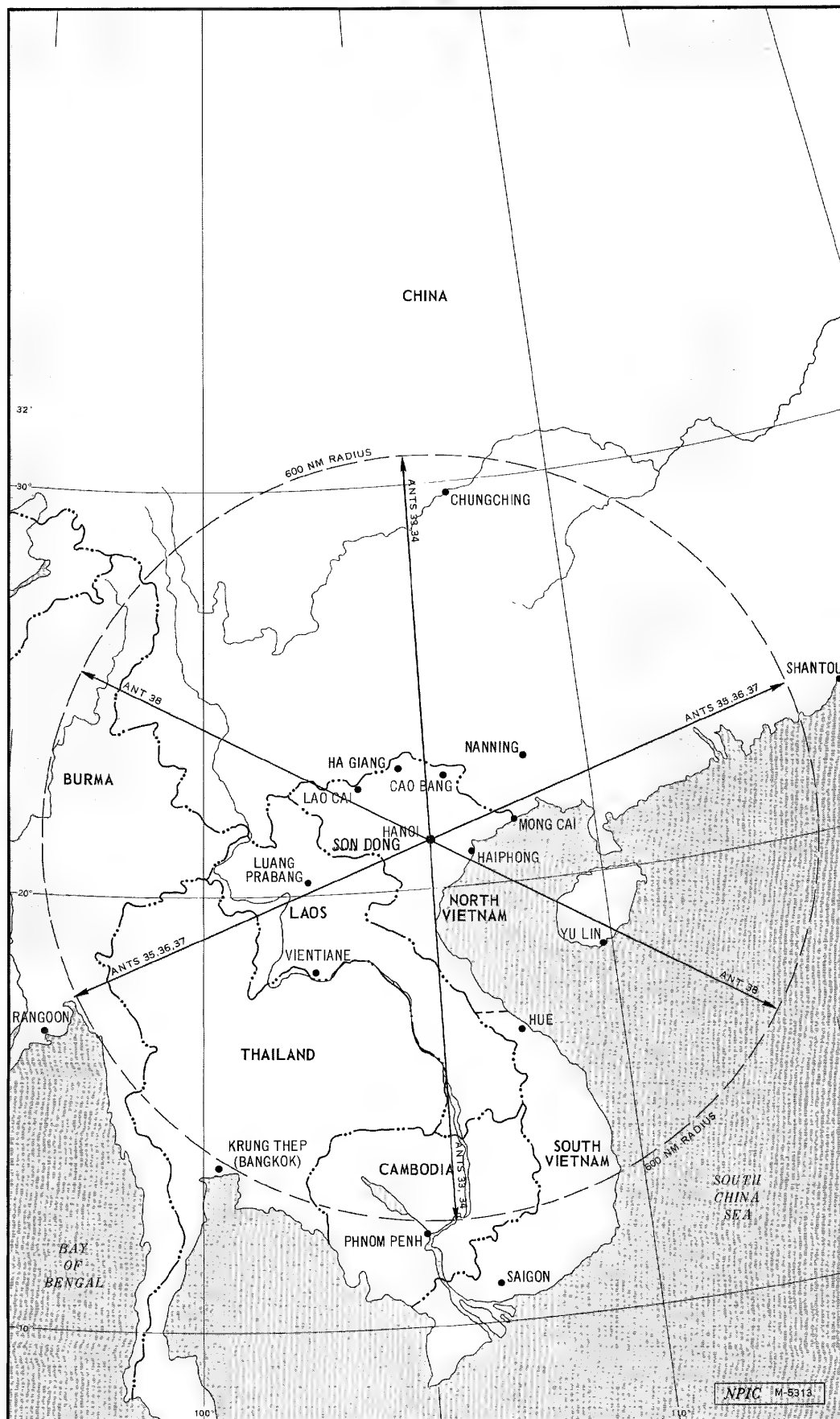


FIGURE 9. AZIMUTH PROJECTIONS FOR HORIZONTAL DIPOLE ANTENNAS AT HANOI INTERNATIONAL RADIO COMMUNICATIONS RECEIVER, SON DONG, NORTH VIETNAM.

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25X1C

LANG TRUOC RADIO COMMUNICATIONS TRANSMITTER

25X1A

SECRET

25X1C

25X1D				Lang Truoc Radio Communications Transmitter		25X1A	COUNTRY VN
25X1D		UTM COORDINATES [REDACTED]	GEOGRAPHIC COORDINATES 21-15 [REDACTED] N 105-52 [REDACTED] E		CATEGORY [REDACTED]	COMIREX NO. None	NIETS NO. None
25X1D							
MAP REFERENCE AMS Series L7014, Sheet 6151 I, 1st ed, 1965, Scale 1:50,000 (Unclassified)							
LATEST IMAGERY USED [REDACTED]				NEGATION DATE (If required) None			
				25X1A			

25X1D

The Lang Truoc facility is located 13.9 nm north of Hanoi and is served by a dirt road leading 1 nm west to Route 3 at Tien Duoc Thuong. The Hanoi-Thai Nguyen Railroad Line passes immediately west of the facility. This station, constructed [REDACTED] is probably being used to support insurgency operations in Southeast Asia (Figure 10).³

25X1D

The antenna farm contains three rhombic, four VEE, and 13 horizontal dipole antennas (Figure 11). Two of the rhombic antennas are oriented for day-night transmission toward Moscow, while the third rhombic antenna is oriented for transmission toward Peking (Figure 12). The VEE antennas, [REDACTED]

25X1B

25X1B [REDACTED] are probably for omni-directional, short range communications. The majority of the horizontal dipole antennas are oriented for high frequency communications to all of Southeast Asia from Rangoon to the South Vietnam coast. The back azimuths for these antennas cover all of southern China (Figure 13). Antenna feedlines for all antennas lead from the transmitter building.

The transmitting facilities are housed in a single-story, H-shaped, concrete building. A pumphouse, a generator, and an adjacent support building are also in the control area. A pipeline for cooling water leads from a lake 0.8 nm south to the transmitter building.

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25X1C



25X1D

FIGURE 10. LANG TRUOC RADIO COMMUNICATIONS TRANSMITTER, NORTH VIETNAM.

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25X1C

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STRUCTURES

ITEM	DESCRIPTION	DIMENSION (FT)
1	TRANSMITTER BUILDING	195 X 50
2	PUMP HOUSE	25 X 25
3	GENERATOR BUILDING	
4	SUPPORT BUILDING	

25X1D

RHOMBIC

ANT NO	AXIS (FT) MAJ MIN	AVERAGE LENGTH ONE SIDE (FT)	TILT ANGLE (°)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 12)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
5 6 7					MOSCOW MOSCOW PEKING	

25X1B

NOTE: EACH LEG IS 4 WAVELENGTHS LONG

DIPOLE

ANT NO	POLE SEPA- RATION (FT)	EST ANT LENGTH (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 13)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
9 10 11				THAI INSURGENCY AREA TONKIN GULF HUE, NHA TRANG SAM NUA, LUANG PRABANG	
12				THAI INSURGENCY AREA	
13				VIENTIANE	
14				MU GIA PASS, PHNOM PENH	
15				MU GIA PASS, PHNOM PENH	
16				THAI INSURGENCY AREA	
17				VIENTIANE	
18				SEPONE, SAIGON	
19				PHONG SALLY	
20				PHONG SALLY	

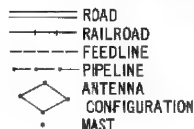
25X1B

VME

ANT NO	POLE SEPA- RATION (FT)	INCLUDED (APEX) ANGLE (°)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
21 22 23 24			

25X1B

NOTE: EACH ANTENNA IS OMNI-DIRECTIONAL AND EACH LEG IS 1/4 WAVE LONG.



100 0 500
FEET (APRX)
NPIC M-5315

FIGURE 11. LANG TRUOC RADIO COMMUNICATIONS TRANSMITTER, NORTH VIETNAM.

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NO FOREIGN DISSEM

25X1C

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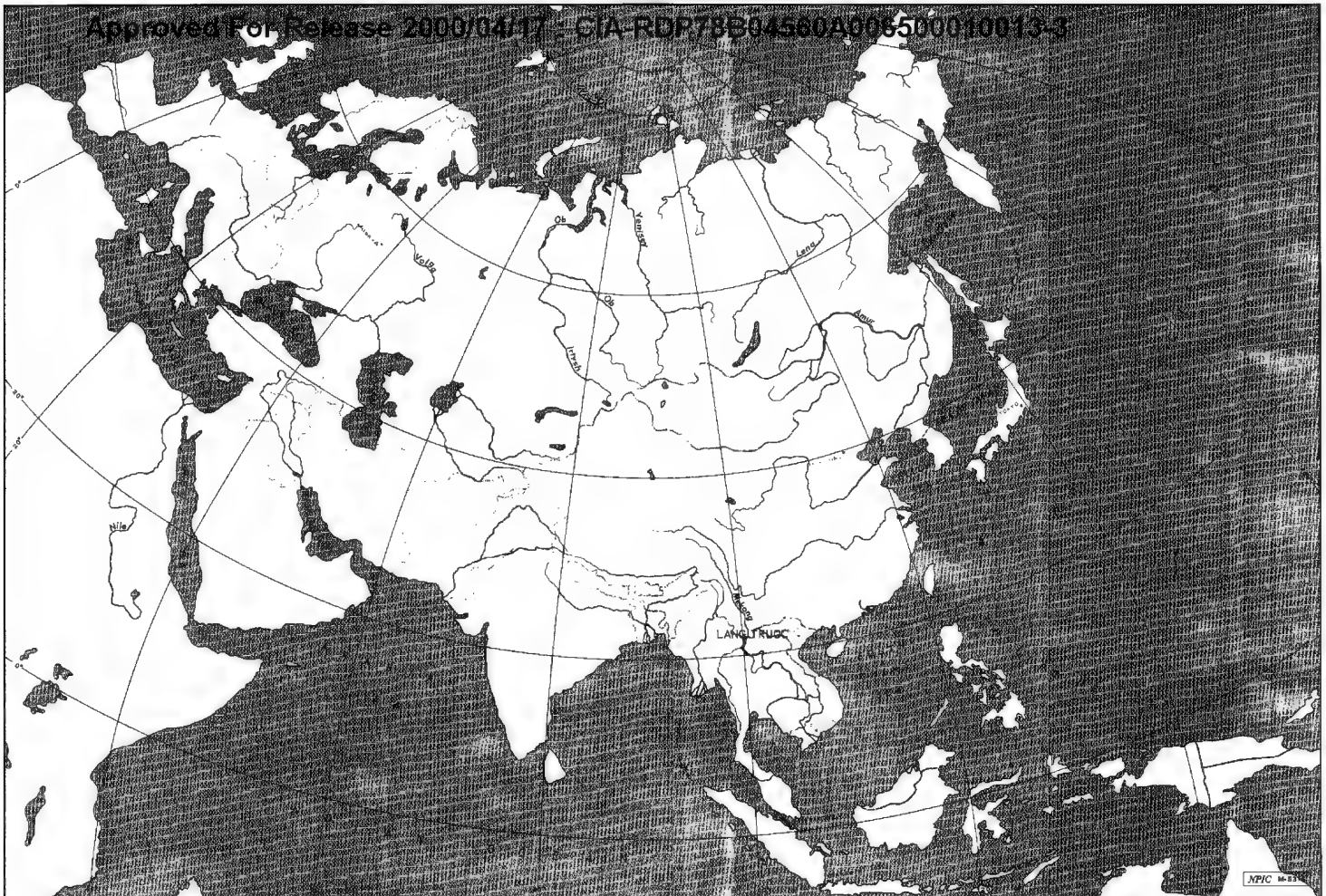


FIGURE 12. FORWARD AZIMUTH PROJECTIONS FOR RHOMBIC ANTENNAS AT LANG TRUC RADIO COMMUNICATIONS TRANSMITTER, NORTH VIETNAM.

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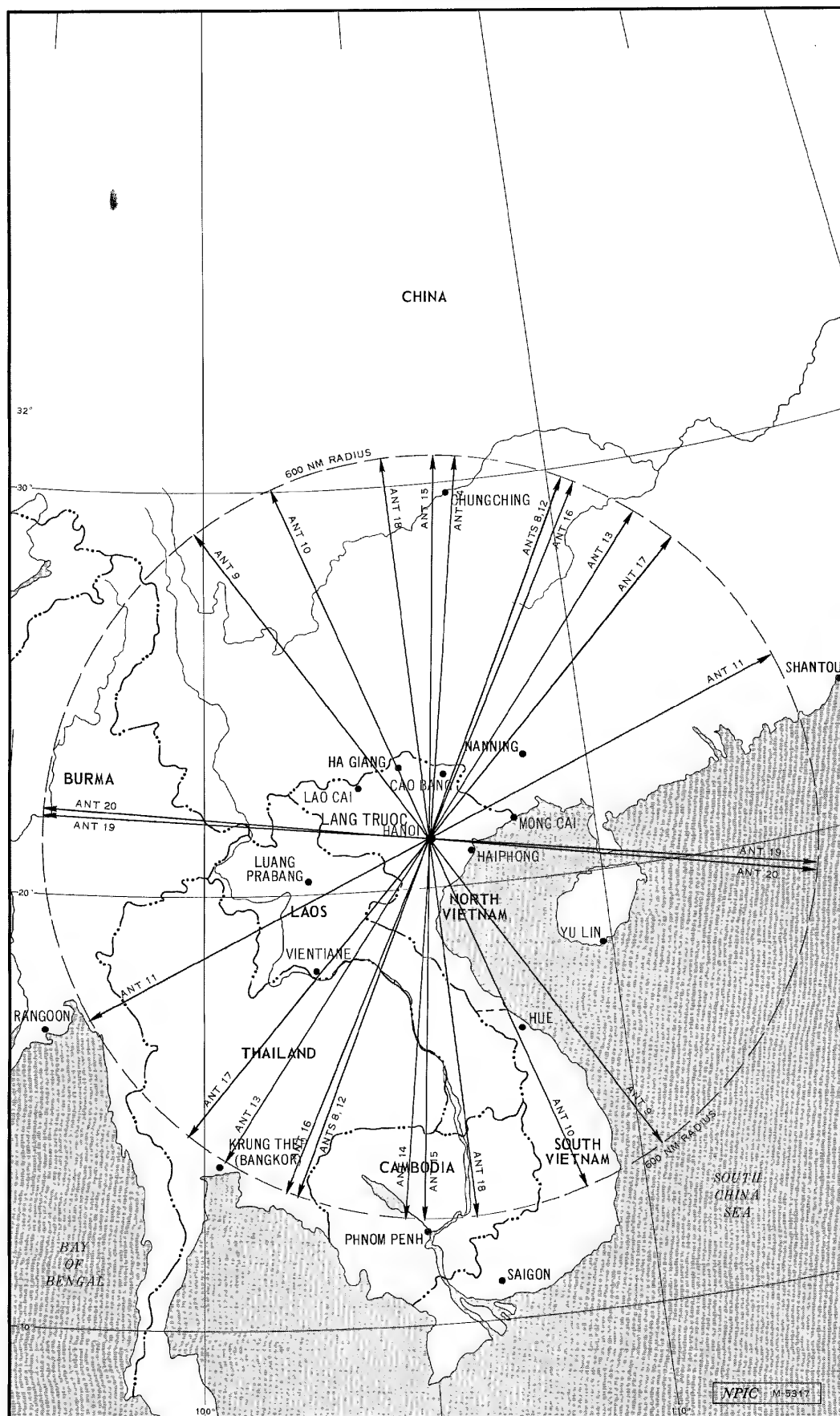


FIGURE 13. AZIMUTH PROJECTIONS FOR HORIZONTAL DIPOLE ANTENNAS AT LANG TRUOC RADIO COMMUNICATIONS TRANSMITTER, NORTH VIETNAM.

NO FOREIGN DISSEM

25X1C

HANOI RADIO
BROADCASTING STATION,
ME TRI

25X1A

NO FOREIGN DISSEM

25X1C

25X1D 25X1D 25X1D		INSTALLATION OR ACTIVITY NAME Hanoi Radio Broadcasting Station, Me Tri 25X1A 25X1A		COUNTRY VN
UTM COORDINATES [REDACTED]		GEOGRAPHIC COORDINATES 20-59 N 105-47 E [REDACTED]		COMIREX NO. None
MAP REFERENCE AMS Series L7014, Sheet 6150 I, 1st ed, 1965, Scale 1:50,000 (Unclassified)		NIETR NO. None		
LATEST IMAGERY USED [REDACTED] 25X1D		NEGATION DATE (if required) None		

The Me Tri Broadcasting Station is located 4.3 nm southwest of Hanoi and is served by a secondary road leading 1 nm southeast to Route 6 at Phung Khoang. Defenses for this installation include four AAA sites within 0.5 nm of the station (Figure 14). The entire station, including the antenna masts, is located within a rectangular fenced area with a guard tower at each corner.

The antenna farm contains two vertical radiators, four double rhombic antennas in day-night pairs, and seven horizontal dipole antennas (Figure 15). The towers for the vertical radiators were apparently first constructed to support a horizontal dipole broadcast array; however, they presently support top loaded vertical radiators for omni-directional transmission. One pair of rhombic antennas is oriented for transmission toward Saigon and Djakarta, while the other pair of rhombic antennas is oriented for transmission toward central Europe (Figure 16). On the rhombic antennas oriented toward the south, certain antenna masts are shorter than others, indicating that each double rhombic consists of a high and a low antenna. One pair of horizontal dipoles is aligned with the antennas parallel to each other and oriented for north-south communications with a provision for switching the feed from one dipole to the other. Another horizontal dipole is oriented for transmission toward the Gulf of Tonkin or Kunming, China (Figure 17). Feedlines to these antennas lead from the main transmitter building. Four additional horizontal dipole antennas are oriented for transmission in a north-south direction and cut for different frequencies with feedlines leading from the secondary transmitter building.

25X1D

The control area of the facility contains the main transmitter building, as well as an adjacent generator building (separately surrounded by double-walled, earth-filled, blast walls approximately [REDACTED] feet thick), an unprotected secondary transmitter building, a bunkered support building, three partially revetted buildings, a water tower, a cooling pond, and three additional support buildings. The support area contains a gatehouse, a messhall, a substation, seven barracks, and 14 support buildings. One of the support buildings in the western corner of the compound had foundations laid for blast walls in [REDACTED] however, the foundations remain incomplete.

25X1D

A cable scar connects the main transmitter building to the control area of the Hanoi International Radio Transmission Station, Dai Mo, 1.6 nm southwest. Another cable scar and a land line are discernible leading northeast from the Me Tri control building toward the Hanoi Citadel. This communications line, constructed in [REDACTED] is probably used to link the government control facilities in Hanoi with the two transmitting stations.

25X1D

Electric power is provided to the station from external sources via a substation, and from a diesel generator within the control area.

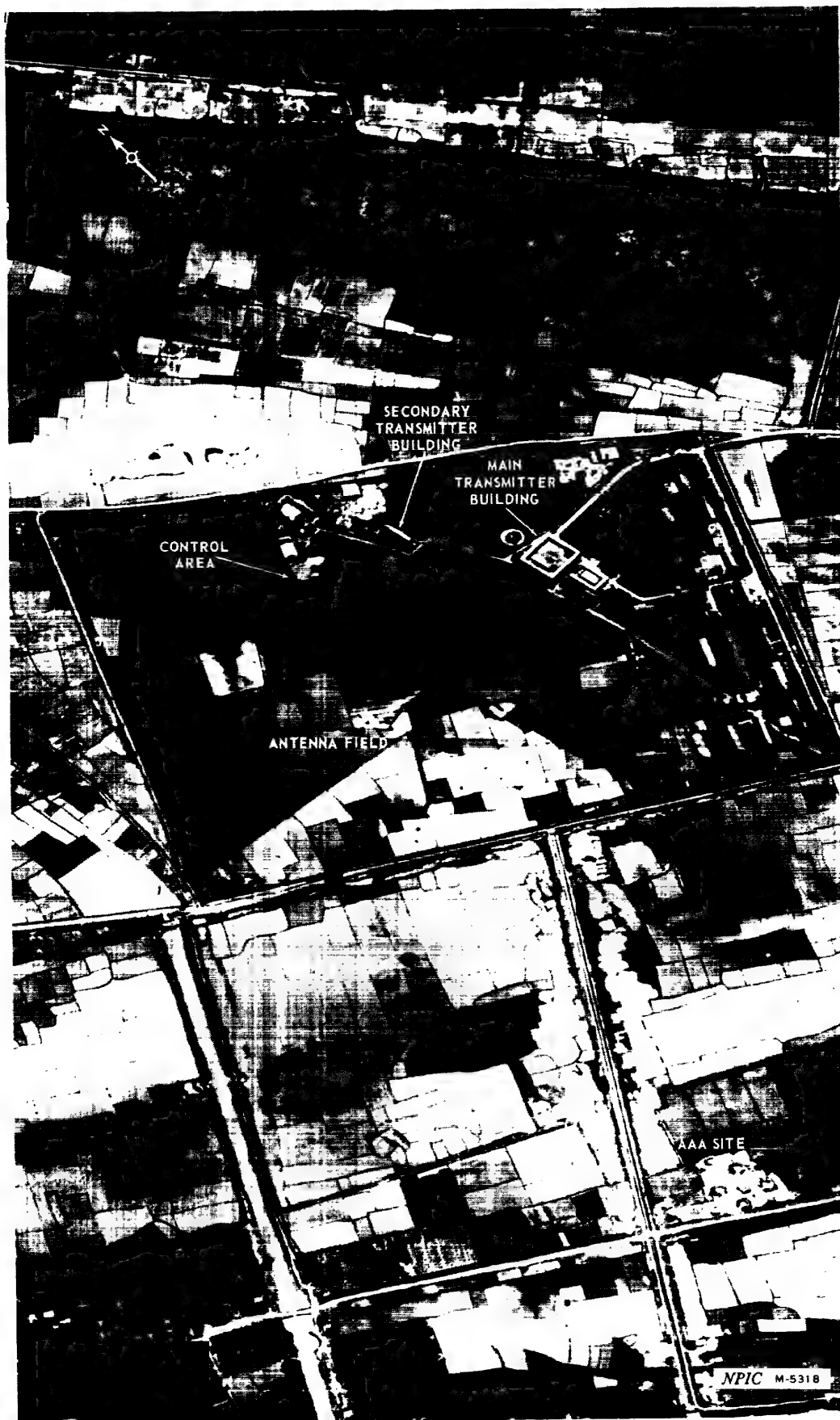


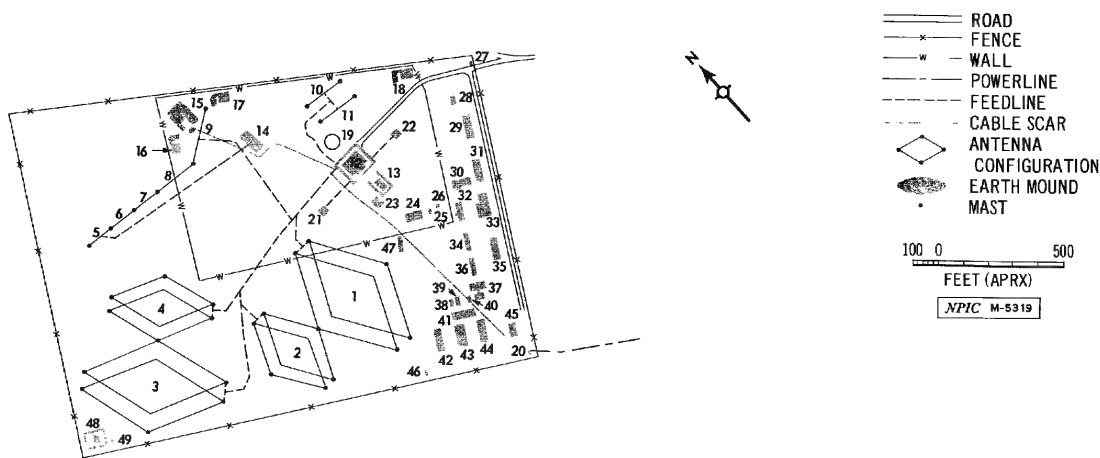
FIGURE 14. HANOI RADIO BROADCASTING STATION, ME TRI, NORTH VIETNAM.

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STRUCTURE

RHOMBIC

ANT NO	AXIS (FT) MAJ MIN	AVERAGE LENGTH ONE SIDE (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 16)	COMPUTED FREQUENCY (MEGAHERTZ)
--------	----------------------	---------------------------------	-------------------------------------	-------------------------------------------	-----------------------------------

25X1D

1
2
3
4



SAIGON, DJAKARTA
SAIGON, DJAKARTA
CENTRAL EUROPE
CENTRAL EUROPE

25X1D



NOTE: EACH ANTENNA TILT ANGLE IS 65° AND IS ASSUMED TO BE FOUR WAVELENGTHS LONG ON A SIDE.

DIPOLE

ANT NO	POLE SEPARATION (FT)	EST ANT LENGTH (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 17)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
--------	----------------------	---------------------	----------------------------------	-------------------------------------------	---------------------------------------------------------

25X1D

5
6
7
8
9
10
11



SAIGON/CHUNGKING
SAIGON/CHUNGKING
SAIGON/CHUNGKING
SAIGON/CHUNGKING
TONKIN GULF/KUNMING
SAIGON/CHUNGKING
SAIGON/CHUNGKING

25X1D

25X1D

ITEM	DESCRIPTION	DIMENSIONS (FT)
12	MAIN TRANSMITTER BUILDING (WALLED)	
13	GENERATOR BUILDING (WALLED)	
14	SECONDARY TRANSMITTER BUILDING	
15	BUNKERED SUPPORT BUILDING	
16	PARTIALLY REVETTED BUILDING	
17	PARTIALLY REVETTED BUILDING	
18	PARTIALLY REVETTED BUILDING	
19	COOLING POND	
20	SUBSTATION	
21	320 FT VERTICAL RADIATING ANTENNA MAST	
22	325 FT VERTICAL RADIATING ANTENNA MAST	
23	SUPPORT BUILDING	
24	SUPPORT BUILDING	
25	SUPPORT BUILDING	
26	WATER TOWER	
27	GATEHOUSE	
28	SUPPORT BUILDING	
29	SUPPORT BUILDING	
30	SUPPORT BUILDING	
31	SUPPORT BUILDING	
32	SUPPORT BUILDING	
33	SUPPORT BUILDING	
34	BARRACKS	
35	BARRACKS	
36	BARRACKS	
37	MESSHALL AND KITCHEN	
38	SUPPORT BUILDING	
39	SUPPORT BUILDING	
40	SUPPORT BUILDING	
41	BARRACKS	
42	BARRACKS	
43	BARRACKS	
44	BARRACKS	
45	SUPPORT BUILDING	
46	SUPPORT BUILDING	
47	SUPPORT BUILDING	
48	SUPPORT BUILDING	
49	SUPPORT BUILDING	

25X1D

FIGURE 15. HANOI RADIO BROADCASTING STATION, ME TRI, NORTH VIETNAM.

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25X1C

0013-3

NO FOREIGN DISSEM

SECRET

25X1C

NPIC/R-134/68

Approved For Release 2000/04/17 : CIA-RDP78B04560A006500010013-3



FIGURE 16. FORWARD AZIMUTH PROJECTIONS FOR RHOMBIC ANTENNAS AT HANOI RADIO BROADCASTING STATION, ME TRI, NORTH VIETNAM.

- 24 -

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NO FOREIGN DISSEM

SECRET

25X1C

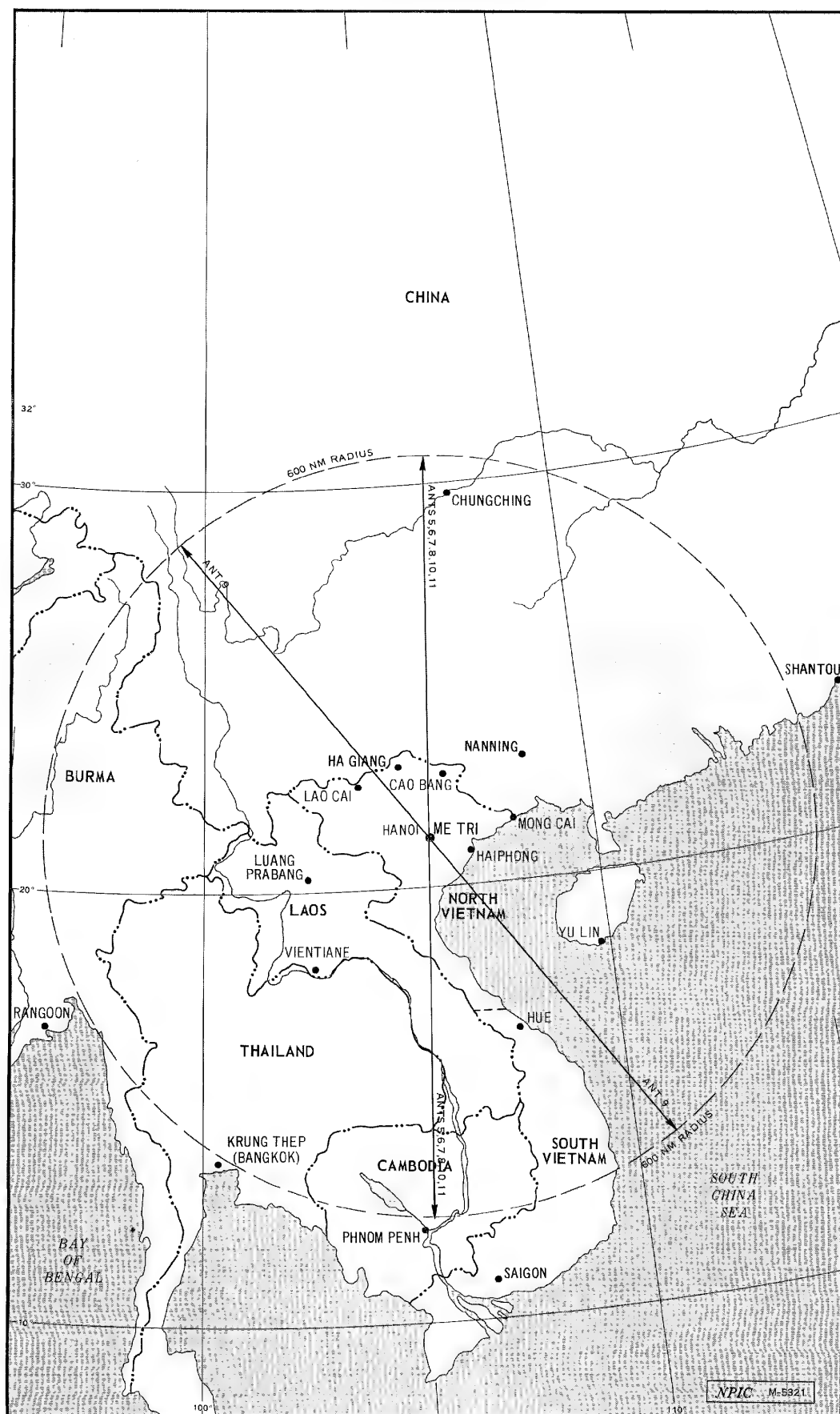


FIGURE 17. AZIMUTH PROJECTIONS FOR HORIZONTAL DIPOLE ANTENNAS AT HANOI RADIO BROADCASTING STATION, ME TRI, NORTH VIETNAM.

HANOI RADIO
COMMUNICATIONS STATION,
HA DONG NO 7

25X1A

25X1D

25X1D

25X1D

INSTALLATION OR ACTIVITY NAME				COUNTRY	
Hanoi Radio Communications Station, Ha Dong No 7				VN	
UTM COORDINATES		GEOGRAPHIC COORDINATES	CATEGORY	COMIREX NO.	NIETB NO.
[REDACTED]		20-58 [REDACTED] N 105-47 [REDACTED] E	[REDACTED]	None	None
MAP REFERENCE				25X1A	
AMS Series L7014, Sheet 6150 I, 1st ed, 1965, Scale 1:50,000 (Unclassified)					
LATEST IMAGERY USED			NEGATION DATE (if required)		
[REDACTED]			None		

25X1D

This station is located 3.5 nm southwest of Hanoi and 1.1 nm east of Ha Dong. It is served by a dirt road leading 0.5 nm northwest to Route 6. One AAA site is within 0.5 nm of the station (Figure 18).

The antenna farm contains two double rhombic antennas (one day-night pair), six horizontal dipole antennas (including two day-night pairs), and one VEE antenna (Figure 19). Feedlines lead from the transmitter building to all of the antennas. The feedlines for the rhombic antennas lead to a switch in the center of each antenna. Feeds leading from this switch to each end of the antenna permit transmission toward either Saigon or Lanchou, China (Figure 20). In addition, a dissipation line connected to the switch allows for a continuing connection to the end of the antenna opposite the antenna feed. One day-night pair of horizontal dipole antennas is oriented for transmission toward the Gulf of Tonkin and Lao Cai, while the other pair is oriented for transmission toward Nam Dinh and Kunming, China. The other two horizontal dipoles are oriented for transmission toward Chungking and Saigon and toward Cao Bang and Phnom Penh, Cambodia (Figure 21). The VEE antenna [REDACTED]

25X1B

[REDACTED] is probably for omni-directional, short range communications.

The transmitters are in a single-story concrete building. Four support buildings, a barracks, a water tower, a gatehouse, and a substation are also within the walled control area. A possible personnel bunker and a water pond are outside the control area.

Electric power is provided from external sources via a substation within the control area. A diesel generator is probably available for emergency power; however, none has been identified on photography.

25X1B

SECRET

NPIC/R-134/68
25X1C



FIGURE 18. HANOI RADIO COMMUNICATIONS STATION, HA DONG NO 7, NORTH VIETNAM.

SECRET

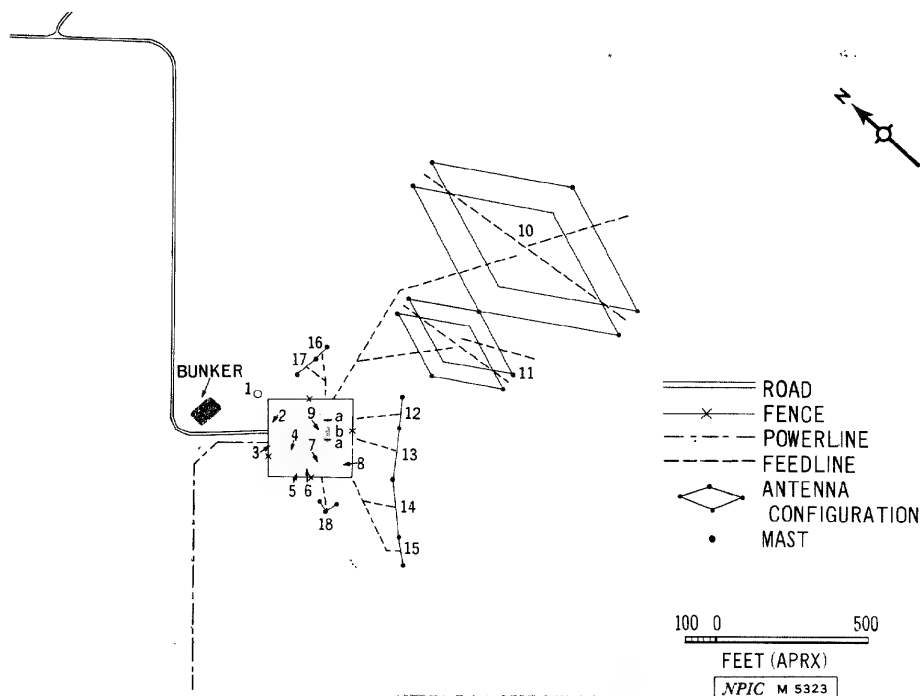
25X1C

SECRET

NPIC/R-134/68

NO FOREIGN DISSEM

25X1C



STRUCTURES

ITEM	DESCRIPTION	DIMENSIONS (FT)
1	POND	25X1D
2	GATEHOUSE	
3	SUBSTATION	
4	BARRACKS	
5	SUPPORT BUILDING	
6	SUPPORT BUILDING	
7	WATER TOWER	
8	SUPPORT BUILDING	
9	TRANSMITTER BUILDING	
a (2)		
b		

RHOMBIC

ANT NO	AXIS (FT) MAX MIN	AVERAGE LENGTH ONE SIDE (FT)	TILT ANGLE (°)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 20)	COMPUTED FREQUENCY (MEGAHERTZ)
25X1D						
10	815 545	25X1D	65	175/355	SAIGON, DJAKARTA LANCHOU	25X1D
11	425 280		65	175/355	SAIGON, DJAKARTA, LANCHOU	

NOTE: EACH ANTENNA IS ASSUMED TO BE FOUR WAVELENGTHS LONG ON A SIDE.

DIPOLE

ANT NO	POLE SEPARATION (FT)	EST ANT LENGTH (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 21)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
25X1D					
12	25X1D	25X1D	25X1D	NAM DINH/KUNMING NAM DINH/KUNMING TONKIN GULF/LAO CAI TONKIN GULF/LAO CAI CHUNGKING/SAIGON CAO BANG/PHNOM PENH	25X1D
13					
14					
15					
16					
17					

NOTE: ITEM 18, VEE ANTENNA, DATA IS UNKNOWN.

FIGURE 19. HANOI RADIO COMMUNICATIONS STATION, HA DONG NO 7, NORTH VIETNAM.

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25X1C

SECRET

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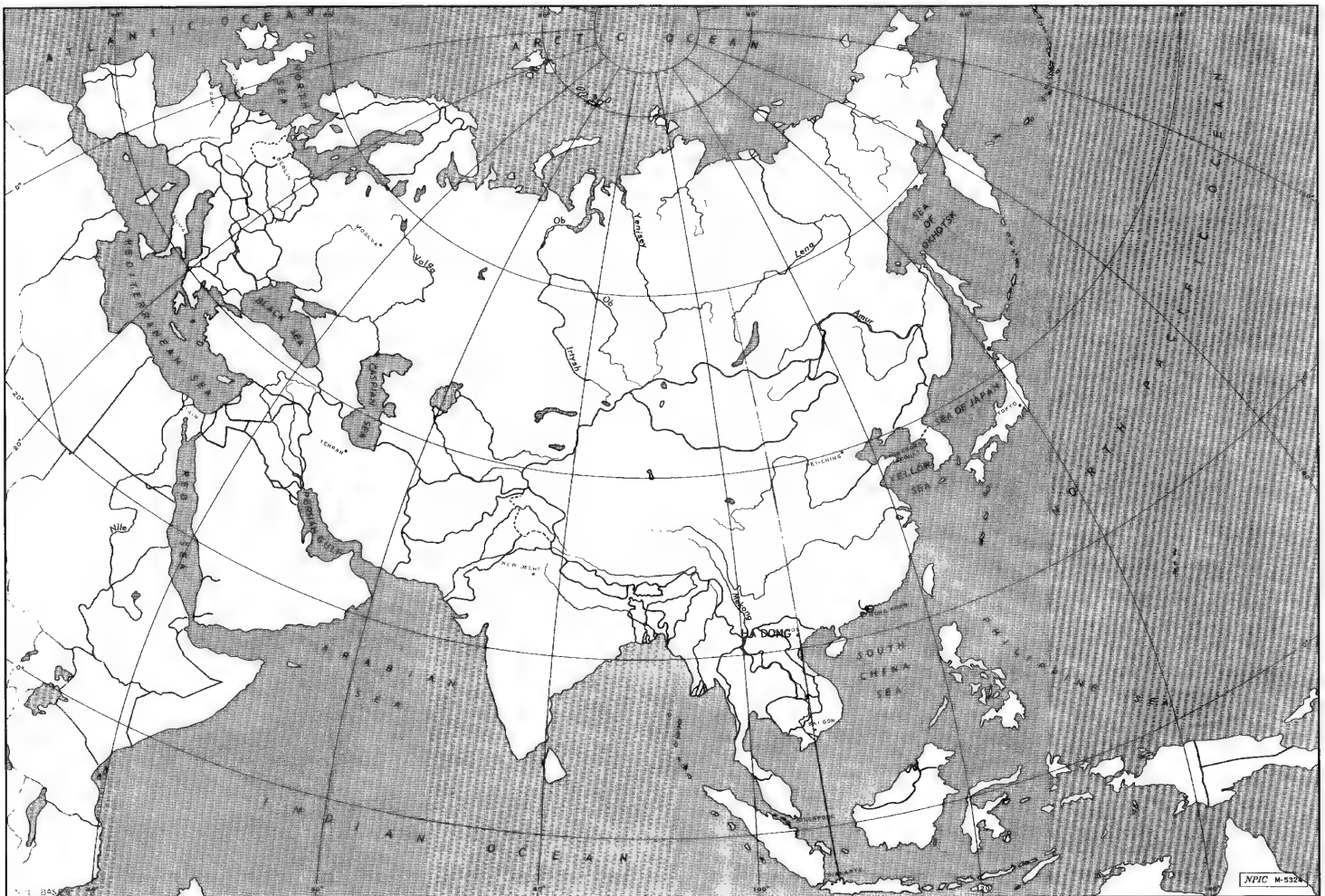


FIGURE 20. FORWARD AZIMUTH PROJECTIONS FOR RHOMBIC ANTENNAS AT HANOI RADIO COMMUNICATIONS STATION, HA DONG NO 7, NORTH VIETNAM.

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NO FOREIGN DISSEM
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SECRET

NPIC/R-134/68

25X1C

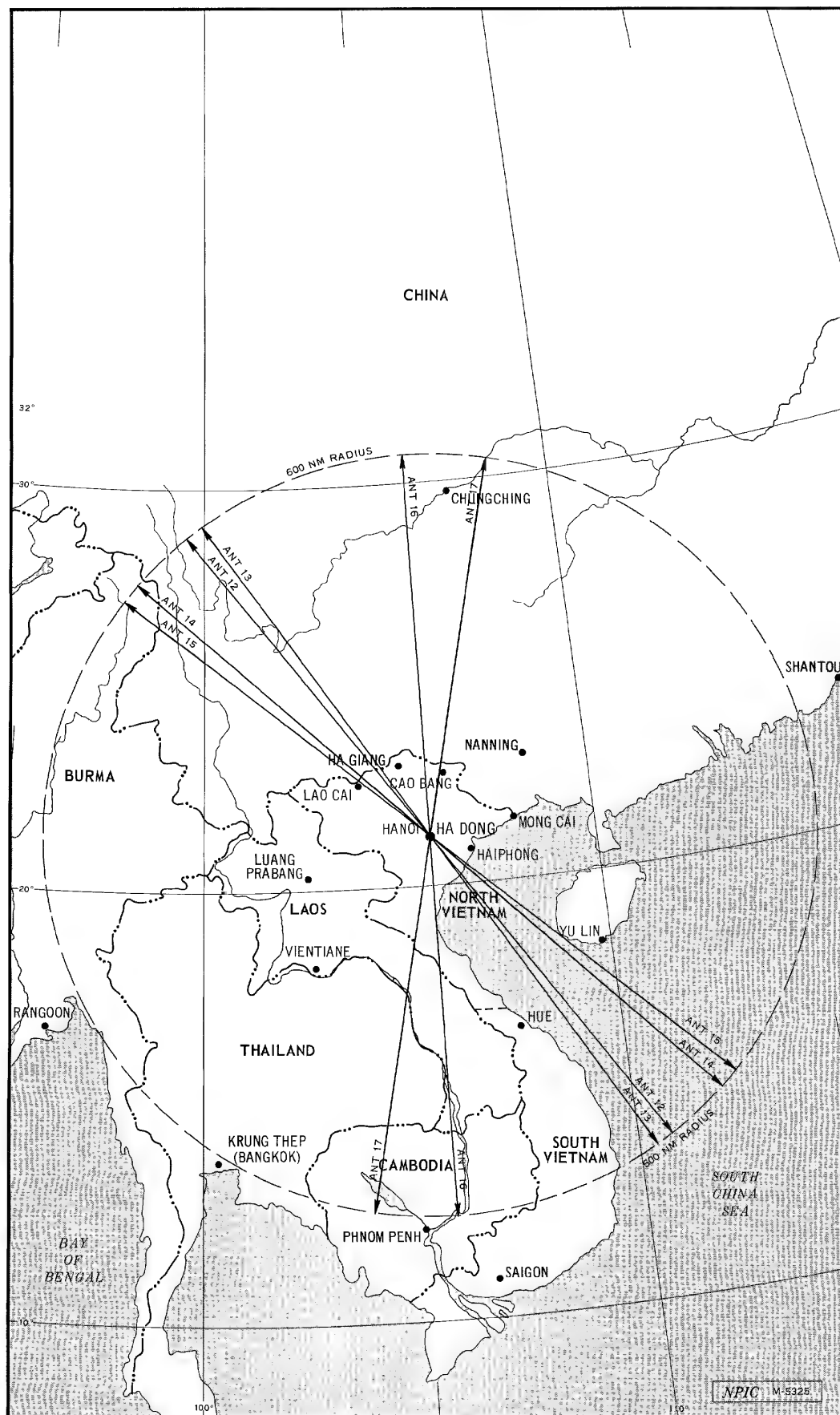


FIGURE 21. AZIMUTH PROJECTIONS FOR HORIZONTAL DIPOLE ANTENNAS AT HANOI RADIO COMMUNICATIONS STATION, HA DONG NO 7, NORTH VIETNAM.

SECRET

25X1C

SECRET

NPIC/R-134/68

25X1C

HANOI RADIO COMMUNICATIONS RECEIVER, PHU COC

25X1A

SECRET

NO FOREIGN DISSEM

25X1C

SECRET

NPIC/R-134/68

25X1C

INSTALLATION OR ACTIVITY NAME				COUNTRY	
Hanoi Radio Communications Receiver, Phu Coc				VN	
25X1D		25X1D		25X1A	
LIT. COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	COMIREX NO.	NIETB NO.	
	20-51 N 105-53 E		None	None	
MAP REFERENCE					
AMS Series L7014, Sheet 6150 I, 1st ed, 1965, Scale 1:50,000					
(Unclassified)					
LATEST IMAGERY USED			NEGATION DATE (if required)		
			None		

25X1D

25X1D

25X1A

This station, located 10.5 nm south-southeast of Hanoi and 0.4 nm east of Phu Coc, is served by a dirt road leading 1.2 nm west to Route 1A and the Hanoi-Vinh Railroad Line (Figure 22).

The antenna farm contains six double-bay FISHBONE, eight VEE, and six horizontal dipole antennas (Figure 23).

25X1B

25X1B

25X1B

The FISHBONE antennas would, however, still provide wide band, long range, high frequency reception from north Africa, Europe, southern China, Taiwan, southern Japan, Saigon, Cambodia, Java, and Sumatra (Figure 24). The VEE antennas are probably for omni-directional, short range communications. The horizontal dipole antennas consist of three day-night pairs oriented for communications with Lang Son-Vientiane, Haiphong-Hoa Binh, and Dong Hoi-Ha Giang (Figure 25). Antenna feedlines from all antennas lead to the receiver building.

25X1B

The walled control area contains a two-story concrete receiver building, three support buildings, two gatehouses, and a substation. The fenced support area just north of the control area contains an auditorium, four two-story barracks, a messhall, a gatehouse, a substation (outside the fenced area), 13 support buildings, a water tower, a probable swimming pool, and a basketball court.

Electric power is provided from external sources via substations within the control and support areas. Diesel generators for emergency power are probably available; however, they have not been identified on photography.

25X1C

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NPIC/R-134/68

25X1C

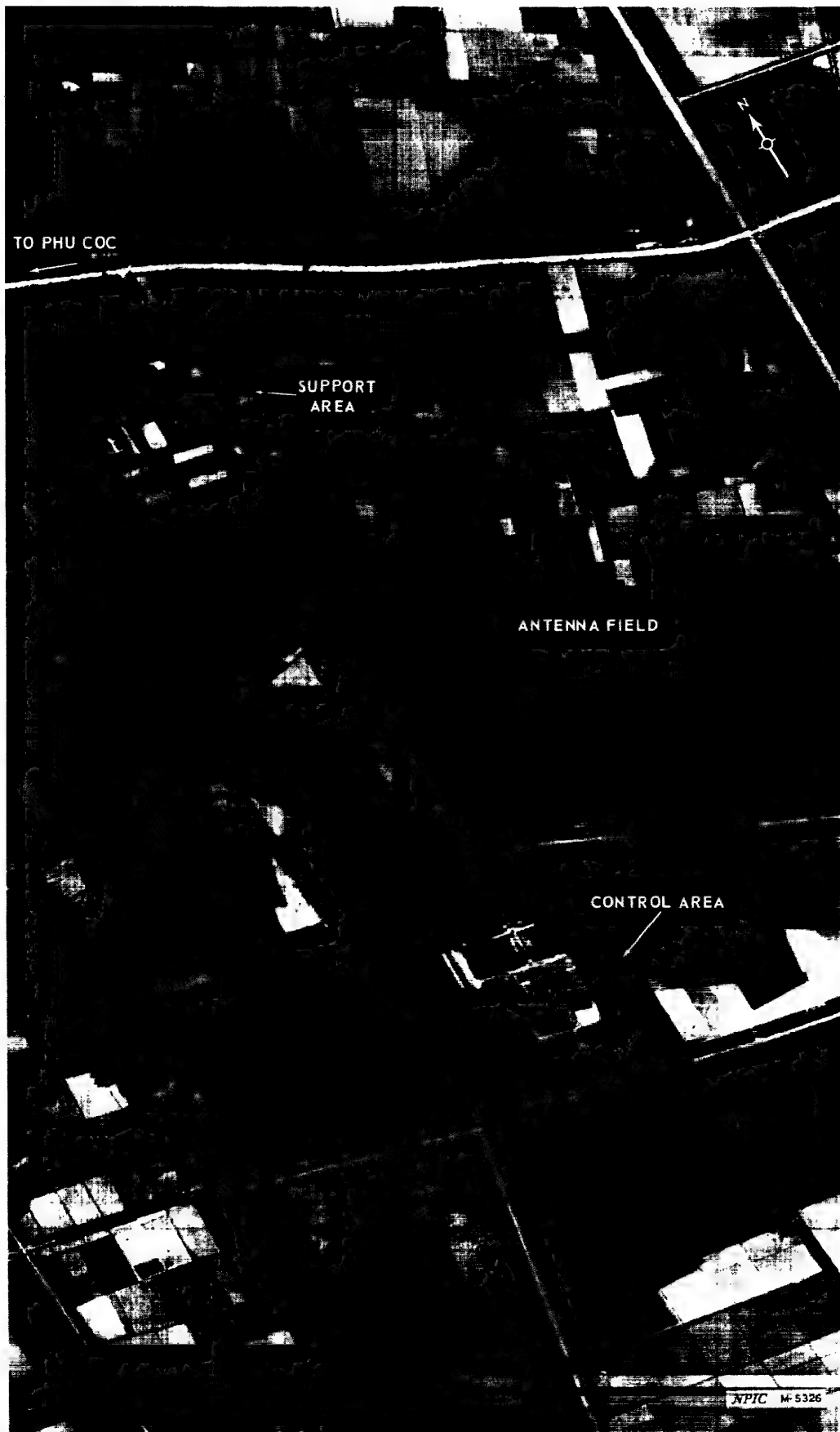


FIGURE 22. HANOI RADIO RECEIVER, PHU COC, NORTH VIETNAM.

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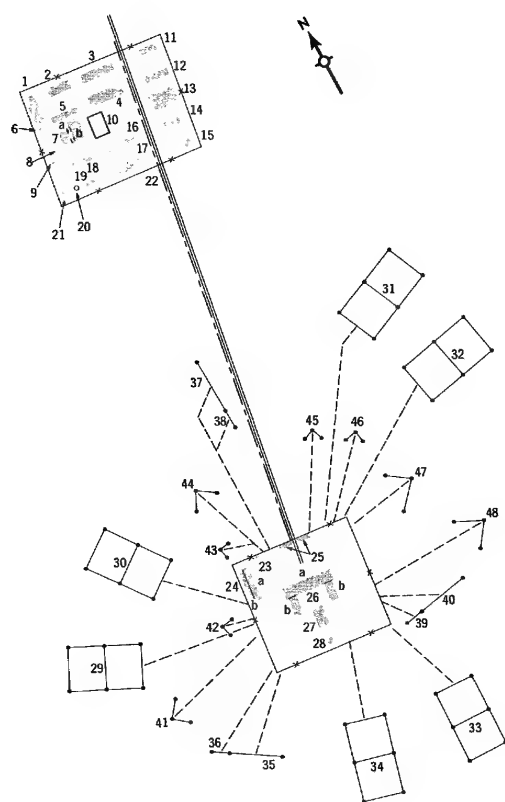
25X1C

SECRET

13-3

25X1C

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— ROAD
 — FENCE
 — POWERLINE
 - - - FEEDLINE
 [] ANTENNA CONFIGURATION
 * MAST

200 0 500
 FEET (APRX)
 NPIC M-5327

STRUCTURES

ITEM	DESCRIPTION	DIMENSIONS (FT)
1	POOL	25X1D
2	SUPPORT BUILDING	
3	BARRACKS	
4	BARRACKS	
5	SUPPORT BUILDING	
6	SUPPORT BUILDING	
7	MESSHALL	
a	KITCHEN	
b	MESSHALL	
8	SUPPORT BUILDING	
9	SUPPORT BUILDING	
10	BASKETBALL COURT	
11	SUPPORT BUILDING	
12	SUPPORT BUILDING	
13	AUDITORIUM	
14	SUPPORT BUILDING	
15	SUPPORT BUILDING	
16	BARRACKS	
17	BARRACKS	
18	SUPPORT BUILDING	
19	SUPPORT BUILDING	
20	WATER TOWER	
21	SUPPORT BUILDING	
22	SUBSTATION	
23	SUBSTATION	
24	SUPPORT BUILDING	
a		
b		
25	2 GATEHOUSES	
26	RECEIVER BUILDING	
a		
b		
27	SUPPORT BUILDING	
28	SUPPORT BUILDING	

ANT NO	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 24)
29	25X1D	NORTH AFRICA
30		EUROPE
31		SOUTHERN CHINA, SOUTHERN JAPAN
32		SOUTHERN CHINA, TAIWAN
33		SAIGON, JAVA
34		CAMBODIA, SUMATRA

ANT NO	POLE SEPARATION (FT)	EST ANT LENGTH (FT)	INITIAL GREAT CIRCLE BEARING (°)	PROBABLE CORRESPONDENT (SEE FIGURE 25)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
35	230	25X1D	25X1D	LANG SON/VIETIANE LANG SON/VIETIANE HAIPHONG/HOA BINH HAIPHONG/HOA BINH DONG HOI/HA GIANG	25X1D
36	80				
37	230				
38	80				
39	80				
40	230				

25X1D

25X1D

ANT NO	POLE SEPARATION (FT)	INCLUDED (APEX) ANGLE (°)	COMPUTED FREQUENCY (MEGAHERTZ) BY POLE SEPARATION
41	80	25X1D	25X1D
42	50		
43	40		
44	80		
45	50		
46	50		
47	125		
48	125		

NOTE: EACH ANTENNA IS OMNI-DIRECTIONAL AND EACH LEG IS 1/4 WAVE LONG.

25X1D

25X1D

FIGURE 23. HANOI RADIO RECEIVER, PHU COC, NORTH VIETNAM.

SECRET

13-3

25X1C

SECRET

25X1C

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NO FOREIGN DISSEM

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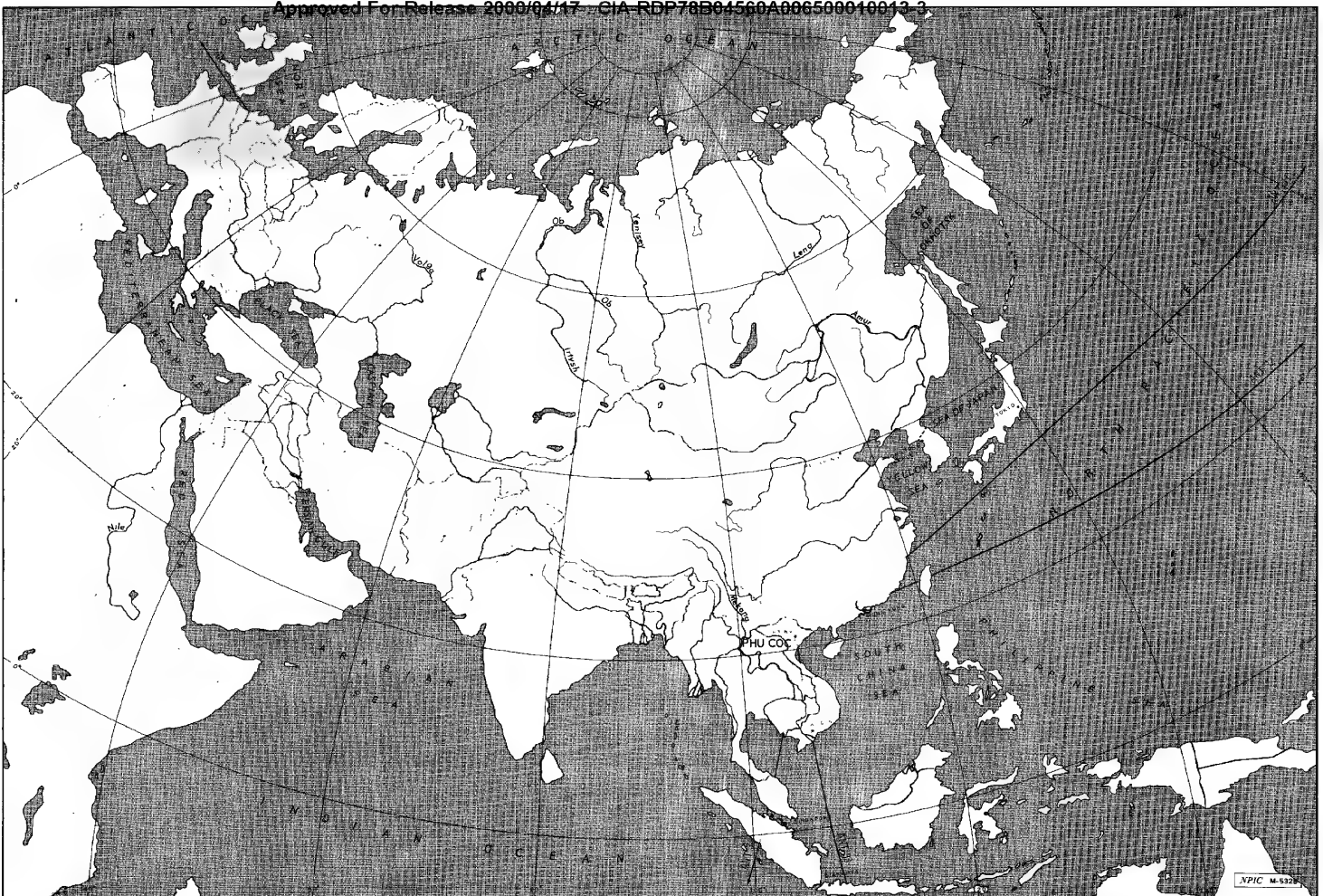


FIGURE 24. FORWARD AZIMUTH PROJECTIONS FOR FISHBONE ANTENNAS AT HANOI RADIO RECEIVER, PHU COC, NORTH VIETNAM.

SECRET

25X1C

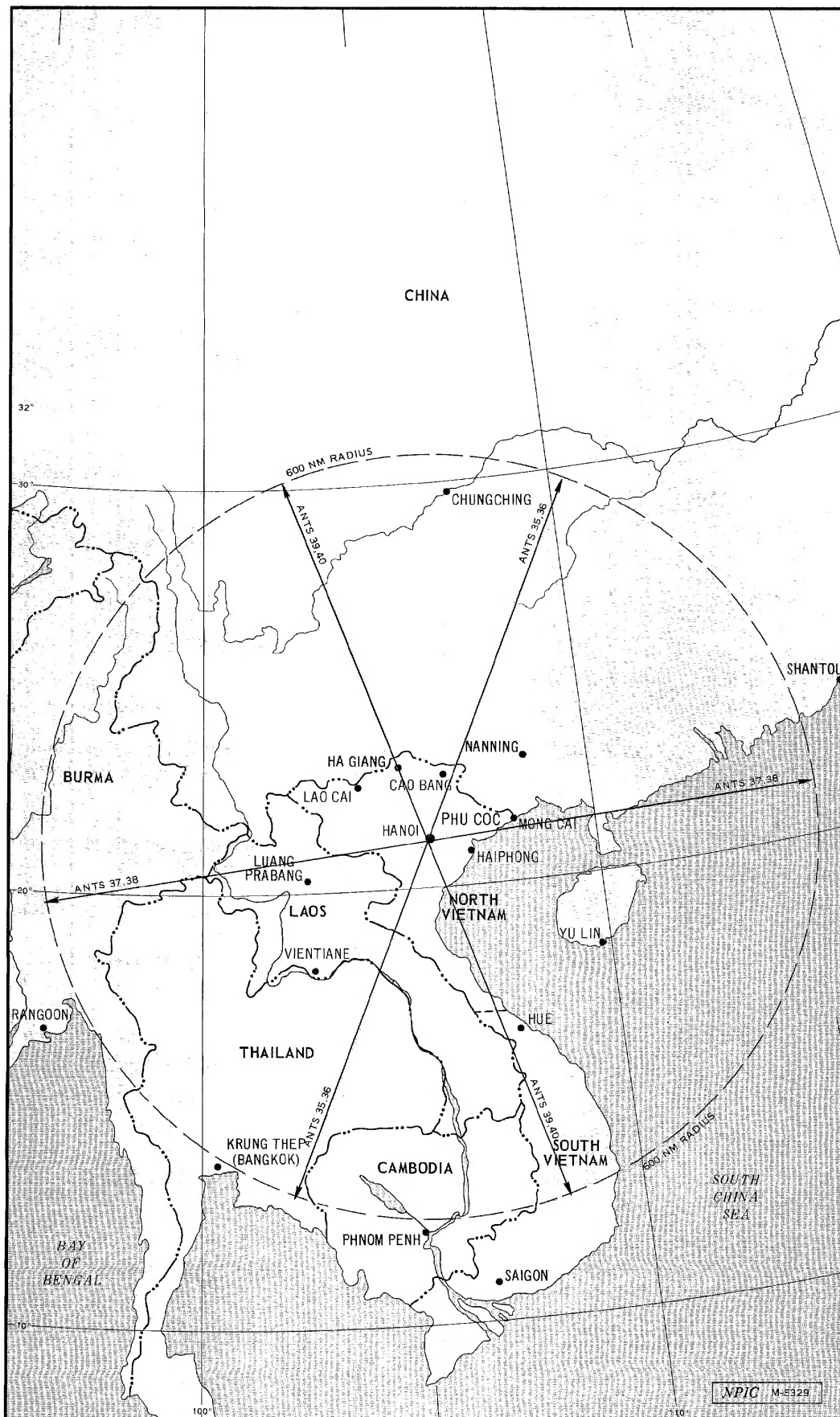


FIGURE 25. AZIMUTH PROJECTIONS FOR HORIZONTAL DIPOLE ANTENNAS AT HANOI RADIO RECEIVER, PHU COC, NORTH VIETNAM.

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NPIC/R-134/68

25X1C

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25X1C

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REQUIREMENT

NSA. SOC/R 139-67

NPIC Project 250135AF

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25X1C

